Remarks

Formal drawings are enclosed herewith as required by the Examiner.

Claim 9 was rejected by the Examiner under 35 USC § 112 for the inclusion of the trademark "MYLAR". In response to this rejection the paragraph at page 6, lines 1-7, has been amended after consulting the Wikipedia Encyclopedia on-line to include the chemical name of the product that is produced under the trademark MYLAR®, namely polyethylene terephthalate polyester film. A copy of the page from the Wikipedia Encyclopedia from which the information was obtained is enclosed herewith. Since this is commonly known to those in the chemical arts and readily available from numerous reference sources, that amendment does not add new matter to the application. Additionally, claim 9 has been amended accordingly. These amendments thus overcome the rejection of claim 9 under 35 USC § 112.

Claims 1-6, 8-10 and 13-21 have been amended to more clearly claim the present invention.

Claims 1-17 were rejected by the Examiner under 35 USC § 103(a) as being obvious from Hallman in view of Sagues. Of these claims, claims 1 and 13 are independent apparatus and method claims, respectively, and the rejection will be discussed with respect to each of those claims first.

Claim 1 as amended calls for:

> "An apparatus to apply a selected masking pattern to a photoresist layer on a workpiece to prevent exposure of masked regions of the photoresist layer, comprising:
>
> a workpiece pre-aligner disposed to movably support and initially

align the workpiece;

a rotation device to engage the workpiece and **to rotate the workpiece while being masked**; and

an ink delivery device disposed to be arranged to be in communication with the photoresist layer of the workpiece **to apply opaque ink** to form the selected masking pattern on the photoresist layer in cooperation with the workpiece pre-aligner **as the workpiece is rotated**;

wherein the opaque ink is opaque to a wavelength of radiation that will activate the photoresist layer on the workpiece." (emphasis added)

Claim 13 calls for:

"A method for selectively masking a photoresist layer on a workpiece, the method comprising the steps of:

selecting one or more regions of the photoresist layer on the workpiece that are to be masked;

rotating the workpiece during masking; and

masking the one or more selected regions of the photoresist layer of the workpiece, **while the workpiece is rotated**, with a layer of ink that is opaque to a wavelength of radiation that will activate the photoresist layer on the workpiece." (emphasis added)

From claims 1 and 13, as amended, it is clear that at selected regions of a photoresist layer on a workpiece has a mask created by the application of a layer of ink with the ink opaque to the wavelength of the radiation that will activate the photoresist.. In the present invention it is clear that the ink is used to protect selected regions of the photoresist layer over which the ink is applied from activation by a wavelength of radiation to which the ink is opaque. Further the workpiece is rotated

while being masked.

Additionally, at various locations in the Specification and the Figures of the instant application it is clear that the Applicant's invention relates to the production of microdevices devices. At page 1, lines 10-14, the Specification says:

> "Lithography techniques are used in the manufacturing of **microdevices**, such as integrated circuits (ICs), flat panel displays, microelectromechanical systems (MEMS), the formation of bump IC interconnects for "flip chip" interconnection technology, and the like."

At page 3, lines 25-27, the Specification says:

> "...**workpiece (wafer)** 40. Workpiece 40 includes a **reference feature** 42, such as **a notch or a flat** that facilitates alignment of the workpiece to another reference.", and

Figs. 1 and 3 show a **circular wafer 40** having a **notch reference feature 42**, and Fig. 3 shows wafer 40 with a **narrow annular ink band 180** that on page 6, line 15, says is "e.g., **several millimeters**".

On page 2 of the Examiner's Action, the Examiner states that Figs. 3a-c of Hallman show the masking of a workpiece coated with a photosensitive layer to prevent exposure of select regions of the photosensitive layer. That is not what Hallamn is illustrating with Figs. 3a-c, or any other of the figures for that mater.

Hallman, on the other hand, does not relate to the production of microdevices of any type, but rather to the production of lower cost printing plates for use in the paper printing industry. At col. 1, lines 10-12, Hallman says:

> "The invention is especially useful for the fabrication of large, commercial grade, high production run lithographic printing **for offset printing**." (emphasis added)

It is clear from the above quote, as well as other areas of the Hallman patent, that Hallman is preparing a page sized printing plate. Thus, the precision needed for the preparation of the printing plate does not require the precision that is needed to manufacture microdevices. Further there is no suggestion by Hallman of the use of a prealigner positional information to adjust the position and possibly the shape of the masking pattern on his substrate. Additionally, from a reading of Hallman that there is no suggestion of rotating the base plates during preparation of the printing plates – for the precision that he requires that is not necessary, and given the size of the base plate rotation would be cumbersome.

Therefore it is submitted that claims 1 and 13 are clearly distinguishable from Hallman.

Sagues only discloses a wafer alignment device for use in the production of semiconductor devices – there is no disclosure of masking a substrate with ink or anything else and how that might be done. The mere fact that the Sagues device can rotate the substrate does not teach or suggest that the substrate can be masked while being rotated.

Therefore since neither Hallman nor Sagues teach or suggest the rotation of the substrate during masking, claims 1 and 13 as amended can not be said to be obvious from the combination of the two cited references.

Claim 3 has been cancelled. The remaining dependent claims all require the rotation of the workpiece during masking by virtue of their dependence from either of the independent claims 1 and 13. For that reason, and others which we need not go into at this time, claims 2, 4-12 and 14-17, are also patentably distinguishable from Hallman and Sagues whether taken alone or taken together.

Claims 18-21 were rejected by the Examiner under 35 USC § 103(a) as being obvious from Hallman in view of Sagues as applied to claim 13, and further in view of Cheng. Each of these claims is dependent from independent method claim 13 with the discussion of the relationship of the Hallman and Sagues references to claim 13 given above in the discussion of the rejection of claims 1-17.

While what the Examiner says about Cheng on pages 5 and 6 of his action is true, it is also true that Cheng does not show or suggest any method or masking the substrate, let alone by doing so while the substrate is being rotated. for example Cheng talks about the use of the bar code after the bar code has been created on the substrate.

Claims 18-21 have been distinguished above from Hallman and Sagues, and since Cheng does not provide the teaching or suggestion that is not provided by Hallman and Sagues with respect to amended independent claim 13, dependent claims 18-21 are therefore patentably distinguishable from the combination of Hallman, Sagues and Cheng.

All of the claims being shown to now be distinguishable from the cited references, new drawings having been supplied and the 112 rejection resolved, the current application is in condition for allowance.

Favorable action is respectfully requested.

Respectfully submitted,
BORISLAV ZLATANOV

Date: July 28, 2004

by _____
Allston L. Jones
(Reg. No. 27,906)

Peters Verny Jones & Schmitt, LLP
425 Sherman Ave., Suite 230
Palo Alto, CA 94306
VOICE: (650) 324-1677 [Mail Box 105]
FAX: (650) 324-1678
e-mail: ajones888@earthlink.net
Attorney Docket No. 3521.160

Main Page | Recent changes | Edit this page | Page history
Printable version | Disclaimers

WIKIPEDIA
The Free Encyclopedia

Main Page
Recent changes
Random page
Current events

Edit this page
Discuss this page
Page history
What links here
Related changes

Special pages
Contact us
Donations

Mylar

From Wikipedia, the free encyclopedia.

Mylar (a trade name in the US) is a polyethylene terephthalate polyester film used for its high tensile strength, transparency and electrical insulation. It is also known as Melinex (a trade name in the UK).

Its other common uses include:

- An overlay over map, on which additional data, or copied data, can be drawn without damaging the map
- Performance Sails for sailboats
- An electrical insulating material

One of its sides is slippery, the other side is microscopically rough.

Edit this page | Discuss this page | Page history | What links here | Related changes

Main Page | About Wikipedia | Recent changes | Go Search